REMARKS

The Office Action indicated that the subject matter of Claims 55, 89 and 90 would be allowable if rewritten in independent form. Applicant has accordingly drafted new Claim 93 to incorporate the allow subject matter of Claim 55. Dependent Claims 94 and 95 are likewise allowable.

Additionally, new Claim 96 also provides the allowable subject matter of Claim 55, further defined by the heating temperature.

Claim 97 is also believed to be allowable, since it defines a display panel having a glass facing surface deactivated to minimize any undesirable coloring, in the same manner of allowability associated with the allowed Claim 55. Thus, it is believed that Claims 93 through 97 represent allowable claims over the art cited of record.

Newly drafted Claims 98 and 99 further defines the deactivating step as comprising heating a glass plate in an oxidizing gas at a temperature of 500°C or higher to provide a yellow preventing effect by reducing the concentration of metal ions that could reduce the silver ions in the vicinity of the surface of the glass substrate. It is believed that these features more than adequately distinguish over any combination of cited references.

The original Claims 44 and 52 - 54 remain pending and were rejected as being completely anticipated by the *Nakajima et al.* Laid-Open Japanese Publication No. 11-11975 as set forth on page 7 of the Office Action.

Referring to the attached Table 9, in our specification the advantages discovered by the present inventors of pre -baking the substrate can be seen in Sample Numbers 126 and 127. As illustrated in Figure 11 of the present invention, a glass substrate can be heated to a temperature of 500°C or higher in an atmosphere of oxygen so that metal ions that possess a reducing action

on silver, for example, in a sodium borosilicate float glass plate can be oxidize and thereby deactivated to significantly reduce the action on silver ions to prevent the silver colloid particle problem where wavelengths in absorption region of 400nm could create a yellowing effect on a substrate and thereby deteriorate the PDP panel.

As the Examiner is aware this is a relatively crowded field and a number of highly skilled scientists, engineers and technicians are attempting to provide relatively economical substrates with an acceptable life cycle. The competitive forces in this field have created an environment wherein the ability to recognize a specific problem and identify economical and cost effective solutions is deserving of patent protection.

Here the present inventors have resolved a common problem without requiring a expensive glass substrate or elaborate and costly manufacturing processes. Thus, a glass substrate, such as a glass floated sodium borosilicate glass plate can be utilized by being heated to a temperature of 500°C or higher in an oxidizing gas atmosphere to thereby sufficiently deactivate the reducing action of metal ions that are contained adjacent to the surface of the glass plate. The subsequent application of electrode precursors with silver and their baking on the glass plate to form the silver electrodes can be accomplished without the deteriorating effect of the growth of silver colloids that have a tendency to provide a yellowing of a substrate.

> Thus when differences that may appear technologically minor nonetheless have a practical impact, particularly in a crowded field, the decision-maker must consider the obviousness of the new structure in this light.
>
> *Continental Can Co. USA Inc. v. Monsanto Co.*,
> 20 USPQ 2d 1746, 1752 (Fed Cir. 1991).

The Office Action cited the *Nakajima* Japanese publication as completely anticipating Claims 44 and 52-54 of the present invention. The *Nakajima* reference recognizes that yellow coloring can occur during the forming of silver electrodes on a plasma display panel. The solution however, to this problem, was by providing a particular glass composition as set forth in column 1 of the disclosure. Thus, the *Nakajima et al.* inventors sought to control the iron oxide content in the glass substrate by using a specific composition of oxides and further applying a hydrogen treated surface equal to or below a specific value by a heating process in a hydrogen atmosphere.

Applicants respectfully traverse the reliance upon paragraph 17 in the *Nakajima* reference, since it does not teach deactivating a glass surface by reducing the action of metal ions on silver ions by heating in an oxidizing atmosphere. The *Nakajima et al.* reference directly teaches a specific glass substrate composition and a heating process in a hydrogen environment, not that of a reducing oxidizing atmosphere. It is respectfully submitted that the heating process relied upon and disclosed in the *Nakajima et al.* reference is significantly different from the deactivating step set forth in Claims 44 and 52 of the present application.

A person skilled in this field would be taught by the *Nakajima et al.* reference to control the iron oxide content in a glass substrate by creating a particular glass composition and having a reducing layer formed on the glass substrate by being exposed in a hydrogen atmosphere.

The present invention however, teaches a deactivating step by subjecting the glass plate to a deactivating process which deactivates the reducing action of the metal ions on the silver ions. This feature is provided specifically in original Claims 44 and 52 and is not taught or suggested by the *Nakajima et al.* reference.

New Claim 98 further defines the advantages of the deactivating step of the present invention on a sodium borosilicate glass plate at a temperature of 500°C or higher in an oxidizing gas atmosphere. These novel features are further carried forwarded in newly drafted Claim 99, wherein the glass plate is subject to a deactivating process for deactivating the reducing action of the metal ions on the silver ions by heating the glass plate to a temperature of 500°C or higher in an oxidizing gas atmosphere.

In view of the redrafting the allowed subject matter in independent claim format and the above comments distinguishing a hydrogen treatment of a specific composition of a glass substrate as relied upon in the rejection of *Nakajima et al.* reference, it is believed the case is now in condition for allowance, and an early notification of the same is requested.

If the Examiner believes that a telephone interview will help further the prosecution of this case, he is respectfully requested to contact the undersigned attorney at the listed telephone number.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on January 12, 2004.

By: James Lee

Signature

Dated: January 12, 2004

Very truly yours,

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